

Clean Version Of The Pending Claims Under 37 C.F.R. 1.121(c)(3):

Claims 1-81, now pending, are submitted below in accordance with 37 C.F.R. §1.121(c)(3), which presents a clean version of the entire set of pending claims in this single amendment paper.

1. A method of encoding a source image, the method comprising:
generating a base layer representing a low-resolution portion of the source image, wherein the base layer has an associated aspect ratio; and
generating an enhancement layer representing a high-resolution portion of the source image, wherein the enhancement layer has an associated aspect ratio, and wherein the aspect ratio associated with the enhancement layer differs from the aspect ratio associated with the base layer.

2. A method as recited in claim 1 wherein the aspect ratio associated with the base layer corresponds to an aspect ratio associated with low-resolution televisions.

3. A method as recited in claim 1 wherein the aspect ratio associated with the enhancement layer corresponds to an aspect ratio associated with high-resolution televisions.

4. A method as recited in claim 1 wherein the aspect ratio associated with the base layer is 4:3.

1 5. A method as recited in claim 1 wherein the aspect ratio associated
2 with the enhancement layer is 16:9.

3
4 6. A method as recited in claim 1 wherein the step of generating a base
5 layer includes low-pass filtering the source image.

6
7 7. A method as recited in claim 1 wherein the step of generating an
8 enhancement layer includes subtracting a portion of the base layer from a
9 corresponding portion of the source image.

10
11 8. A method as recited in claim 1 wherein the step of generating an
12 enhancement layer includes:

13 extracting a first image from the base layer, wherein the aspect ratio of the
14 first image differs from the aspect ratio of the base layer;

15 extracting a second image from the source image, wherein the aspect ratio
16 of the second image matches the aspect ratio of the first image; and

17 subtracting the first image from the second image.

18
19 9. A method as recited in claim 8 wherein the aspect ratio of the first
20 image matches an aspect ratio associated with high-resolution televisions.

21
22 10. A method as recited in claim 8 further including determining a
23 vertical offset value, wherein the vertical offset value indicates the location from
24 which the first image is extracted from the base layer.

1 11. A method as recited in claim 8 further including determining a
2 horizontal offset value, wherein the horizontal offset value indicates the location
3 from which the first image is extracted from the base layer.

4
5 12. A method as recited in claim 1 wherein the step of generating an
6 enhancement layer includes high-pass filtering the source image.

7
8 13. A method as recited in claim 1 further including combining the base
9 layer and the enhancement layer into a single transport stream.

10
11 14. A method as recited in claim 1 further including transmitting the
12 base layer and the enhancement layer to an image decoding system.

13
14 15. A method as recited in claim 1 further including transmitting only
15 the base layer to an image decoding system.

16
17 16. A method as recited in claim 1 further including transmitting the
18 base layer to an image decoding system using a first transmission medium and
19 transmitting the enhancement layer to the image decoding system using a second
20 transmission medium.

1 17. A method as recited in claim 1 further including transmitting the
2 base layer to an image decoding system using a first transmission format and
3 transmitting the enhancement layer to the image decoding system using a second
4 transmission format.

5
6 18. A method as recited in claim 1 further including storing the base
7 layer and the enhancement layer on a storage medium.

8
9 19. A method as recited in claim 1 further including storing the base
10 layer on a first storage medium and storing the enhancement layer on a second
11 storage medium.

12
13 20. One or more computer-readable memories containing a computer
14 program that is executable by a processor to perform the method recited in
15 claim 1.

16
17 21. A method comprising:
18 decoding a first layer representing a low-resolution portion of an encoded
19 image, wherein the first layer has an associated aspect ratio; and
20 decoding a second layer representing a high-resolution portion of the
21 encoded image, wherein the second layer has an associated aspect ratio, and
22 wherein the aspect ratio associated with the second layer differs from the aspect
23 ratio associated with the first layer.
24
25

1 22. A method as recited in claim 21 wherein the aspect ratio associated
2 with the first layer corresponds to an aspect ratio associated with low-resolution
3 televisions.

4
5 23. A method as recited in claim 21 wherein the aspect ratio associated
6 with the second layer corresponds to an aspect ratio associated with high-
7 resolution televisions.

8
9 24. A method as recited in claim 21 wherein the aspect ratio associated
10 with the first layer is 4:3.

11
12 25. A method as recited in claim 21 wherein the aspect ratio associated
13 with the second layer is 16:9.

14
15 26. A method as recited in claim 21 wherein the first layer is a base
16 layer.

17
18 27. A method as recited in claim 21 wherein the second layer is an
19 enhancement layer.

20
21 28. A method as recited in claim 21 further including communicating
22 the first layer to a low-resolution television.

1 29. A method as recited in claim 21 further including combining the
2 second layer and a portion of the first layer to generate high-resolution image data.

3
4 30. A method as recited in claim 21 wherein the method is executed by a
5 television.

6
7 31. A method as recited in claim 21 wherein the first layer is decoded
8 from a physical medium and the second layer is decoded from a received data
9 stream.

10
11 32. A method as recited in claim 21 further including correcting an
12 anamorphic squeeze in the first layer.

13
14 33. A method as recited in claim 21 wherein the first layer is received at
15 a first time and the second layer is received at a second time.

16
17 34. A method as recited in claim 21 wherein the first layer is received
18 from a first media and the second layer is received from a second media.

19
20 35. One or more computer-readable memories containing a computer
21 program that is executable by a processor to perform the method recited in
22 claim 21.

1 36. A method comprising:
2 transmitting a base layer representing a low-resolution portion of an image,
3 wherein the base layer has an associated aspect ratio; and
4 transmitting an enhancement layer representing a high-resolution portion of
5 the image, wherein the enhancement layer has an associated aspect ratio, and
6 wherein the aspect ratio associated with the enhancement layer differs from the
7 aspect ratio associated with the base layer.

8
9 37. A method as recited in claim 36 wherein the aspect ratio associated
10 with the base layer corresponds to an aspect ratio associated with low-resolution
11 televisions.

12
13 38. A method as recited in claim 36 wherein the aspect ratio associated
14 with the enhancement layer corresponds to an aspect ratio associated with high-
15 resolution televisions.

16
17 39. A method as recited in claim 36 wherein the base layer is transmitted
18 using a first transmission medium and the enhancement layer is transmitted using
19 a second transmission medium.

20
21 40. A method as recited in claim 36 wherein the base layer is
22 transmitted using a first transmission format and the enhancement layer is
23 transmitted using a second transmission format.

1 41. One or more computer-readable memories containing a computer
2 program that is executable by a processor to perform the method recited in
3 claim 36.

4
5 42. An apparatus comprising:
6 a base layer generator to generate a base layer having a first aspect ratio,
7 wherein the base layer represents a low-resolution portion of an image; and
8 an enhancement layer generator coupled to the base layer generator to
9 generate an enhancement layer having a second aspect ratio, wherein the
10 enhancement layer represents a high-resolution portion of the image, and wherein
11 the first aspect ratio differs from the second aspect ratio.

12
13 43. An apparatus as recited in claim 42 wherein the base layer generator
14 is a low-pass filter.

15
16 44. An apparatus as recited in claim 42 wherein the enhancement layer
17 generator is a high-pass filter.

18
19 45. An apparatus as recited in claim 42 wherein the enhancement layer
20 generator includes an image extractor to extract a portion of the base layer and a
21 differencing module to subtract the extracted portion of the base layer from a
22 corresponding portion of the image.

1
2 46. An apparatus as recited in claim 42 further including a transmitter
3 coupled to the base layer generator and the enhancement layer generator, wherein
4 the transmitter combines the base layer and the enhancement layer into a single
5 transport stream.

6
7 47. An apparatus as recited in claim 42 further including a transmitter
8 coupled to the base layer generator and the enhancement layer generator, wherein
9 the transmitter transmits the base layer and the enhancement layer to an image
10 decoding system.

11
12 48. An apparatus as recited in claim 42 further including a transmitter
13 coupled to the base layer generator, wherein the transmitter that transmits only the
14 base layer to an image decoding system.

15
16 49. An apparatus as recited in claim 42 further including a storage
17 medium coupled to the base layer generator and the enhancement layer generator,
18 wherein the storage medium stores the base layer and the enhancement layer.
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1 50. An apparatus comprising:
2 a base layer decoder to decode a base layer representing a low-resolution
3 portion of an image, wherein the base layer has an associated aspect ratio; and
4 an enhancement layer decoder coupled to the base layer decoder to decode
5 an enhancement layer representing a high-resolution portion of an image, wherein
6 the enhancement layer has an associated aspect ratio that differs from the aspect
7 ratio associated with the base layer.

8
9 51. An apparatus as recited in claim 50 wherein the aspect ratio
10 associated with the base layer corresponds to an aspect ratio associated with low-
11 resolution televisions.

12
13 52. An apparatus as recited in claim 50 wherein the aspect ratio
14 associated with the enhancement layer corresponds to an aspect ratio associated
15 with high-resolution televisions.

16
17 53. An apparatus as recited in claim 50 wherein the apparatus is a
18 television.

19
20 54. An apparatus as recited in claim 50 further including a receiver
21 coupled to the base layer decoder and the enhancement layer decoder, wherein the
22 receiver is to receive a transport stream containing a base layer and an
23 enhancement layer.

1 55. One or more computer-readable media having stored thereon a
2 computer program comprising the following steps:

3 generating a first layer representing a low-resolution portion of a source
4 image, wherein the first layer has an associated aspect ratio; and

5 generating a second layer representing a high-resolution portion of the
6 source image, wherein the second layer has an associated aspect ratio, and wherein
7 the aspect ratio associated with the second layer is different from the aspect ratio
8 associated with the first layer.

9
10 56. One or more computer-readable media as recited in claim 55
11 wherein the aspect ratio associated with the first layer is 4:3.

12
13 57. One or more computer-readable media as recited in claim 55
14 wherein the aspect ratio associated with the second layer is 16:9.

15
16 58. One or more computer-readable media as recited in claim 55
17 wherein the first layer is a base layer.

18
19 59. One or more computer-readable media as recited in claim 55
20 wherein the second layer is an enhancement layer.

21
22 60. One or more computer-readable media as recited in claim 55
23 wherein the step of generating a second layer includes comparing a portion of the
24 first layer with a corresponding portion of the source image.
25

1 61. One or more computer-readable media as recited in claim 55 further
2 including transmitting the first layer and the second layer to an image decoding
3 system.

4
5 62. One or more computer-readable media as recited in claim 55 further
6 including transmitting only the first layer to an image decoding system.

7
8 63. One or more computer-readable media as recited in claim 55 further
9 including storing the first layer on a storage medium.

10
11 64. One or more computer-readable media as recited in claim 55 further
12 including storing the second layer on a storage medium.

13
14 65. One or more computer-readable media having stored thereon a
15 computer program comprising the following steps:

16 decoding a base layer representing a low-resolution portion of an encoded
17 image, wherein the base layer has a first aspect ratio; and

18 decoding an enhancement layer representing a high-resolution portion of
19 the encoded image, wherein the enhancement layer has a second aspect ratio, and
20 wherein the first aspect ratio is different from the second aspect ratio.

21
22 66. One or more computer-readable media as recited in claim 65
23 wherein the first aspect ratio is 4:3.

1 67. One or more computer-readable media as recited in claim 65
2 wherein the second aspect ratio is 16:9.

3
4 68. One or more computer-readable media as recited in claim 65 further
5 including communicating the base layer to a low-resolution television.

6
7 69. One or more computer-readable media as recited in claim 65 further
8 including communicating the base layer and the enhancement layer to a high-
9 resolution television.

10
11 70. A method of encoding a source image, the method comprising:
12 generating a base layer representing a low-resolution portion of the source
13 image, wherein the base layer has an associated aspect ratio; and
14 generating an enhancement layer representing a high-resolution portion of
15 the source image, wherein the enhancement layer has an associated aspect ratio,
16 wherein the aspect ratio associated with the enhancement layer differs from the
17 aspect ratio associated with the base layer, and wherein both the base layer and the
18 enhancement layer are used to generate a high-resolution image.

19
20 71. A method as recited in claim 70 wherein the aspect ratio associated
21 with the base layer corresponds to an aspect ratio associated with low-resolution
22 televisions.

1 72. A method as recited in claim 70 wherein the aspect ratio associated
2 with the enhancement layer corresponds to an aspect ratio associated with high-
3 resolution televisions.

4
5 73. A method comprising:
6 decoding a first layer representing a low-resolution portion of an encoded
7 image, wherein the first layer has an associated first aspect ratio;
8 decoding a second layer representing a high-resolution portion of the
9 encoded image, wherein the second layer has an associated second aspect ratio,
10 and wherein the second aspect ratio differs from the first aspect ratio; and
11 combining the second layer and the first layer to generate high-resolution
12 image data.

13
14 74. A method as recited in claim 73 further comprising communicating
15 the first layer to a low-resolution television.

16
17 75. A method as recited in claim 73 further comprising communicating
18 the high-resolution image data to a high-resolution television.

19
20 76. A method as recited in claim 1 wherein both the base layer and the
21 enhancement layer are used to generate a high-resolution image.

22
23 77. A method as recited in claim 1 wherein the enhancement layer
24 contains only the high-resolution portion of the source image.
25

1 78. A method as recited in claim 21 wherein both the first layer and the
2 second layer are used to generate high-resolution image data.

3
4 79. A method as recited in claim 21 wherein the second layer contains
5 only high-resolution image data.

6
7 80. A method as recited in claim 36 wherein both the base layer and the
8 enhancement layer are used to generate high-resolution image data.

9
10 81. A method as recited in claim 50 wherein both the base layer and the
11 enhancement layer are used to generate high-resolution image data.